

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 6/09/2006 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the document listed is listed in error and is not a US patent or US patent application publication. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 10-12, 14, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Arnon (WO 01/37576 A1).

Regarding claims 1 and 12, Arnon teaches a light source (1, figure 3) operable to emit a light; a display panel (5, figure 3); and an optical filter operable to be vibrated (12,

13, figure 3), where an emission of the light by said light source propagates along an optical path extending from said light source through said optical filter to said display panel; and wherein said optical filter is vibrated during the emission of the light by said light source (page 10, lines 13-23).

Regarding claim 3, Arnon further teaches an electro-mechanical wave transducer operable to vibrate said optical filter (12, 13, 24, figure 3).

Regarding claim 10, Arnon further teaches the display panel is one of a LCoS display panel (page 8, line 9).

Regarding claim 11, Arnon further teaches the display system is one of a projection display system (page 7, line 19).

Regarding claim 14, Arnon further teaches a optical filter (12, 13, figure 1); and an electro-mechanical wave transducer operable to vibrate said optical filter as light is propagated along an optical path traversing through said optical filter (24, figure 3).

Regarding claim 22, Arnon further teaches the display system is one of a projection display system (page7, line 19).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnon (WO 01/37576 A1) in view of Felstrom (US 2002/0123308 A1).

Regarding claims 2 and 15, Arnon further teaches a means for vibrating said optical filter (page 10 lines 22-23) in a pendulum motion. Pendulum motion is a period motion. Arnon does not specifically teach a Fourier waveform, however, a person having ordinary skill in the art would have appreciated that any periodic signal is usefully expressed as a Fourier series as evidenced by Felstrom (paragraph 0026). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to drive the filter of Arnon with a Fourier waveform because a Fourier waveform is the mathematical method of building the electrical signal that would drive the actuator of Arnon.

5. Claims 4-7, 13, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnon (WO 01/37576 A1) in view of Beliveau (US 2002/0021569 A1).

Regarding claims 4 and 16, Arnon does not teach a first plate having a first aperture; and wherein said optical filter is embedded within said first aperture of said first plate. Beliveau teaches a first plate having a first aperture (930, figure 9B); and wherein said optical filter is embedded within said first aperture of said first plate (paragraph 0066). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the projection system of Arnon with the aperture color filter of Beliveau because the aperture color filter of Beliveau allows the projector to use a greater array of colors (paragraph 0009).

Regarding claim 5 and 17, Beliveau further teaches a second plate having a second aperture sequentially arranged with said first aperture in a direction of the propagation of the light through said optical filter (844g-r; 848g-r; figure 8; paragraph 0066). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the projection system of Arnon with the aperture color filter of Beliveau because the aperture color filter of Beliveau allows the projector to use a greater array of colors (paragraph 0009).

Regarding claims 6 and 18, Arnon further teaches a transducer unit operable to shift said first plate in an oscillating manner relative to the optical path thereby vibrate said optical filter (24, figure 3).

Regarding claims 7 and 19, Arnon further teaches said transducer unit is controlled by a control signal having a signal waveform for facilitating a desired illumination of the emitted light on said display panel (page 10 lines 19-23). The controller has to control the motor with an electrical signal having some shape and frequency, especially in the case of periodic pendulum motion.

Regarding claim 13, Arnon further teaches the vibration of the optical filter includes a shifting of the plate relative to the propagation of the emitted light through the optical filter (page 10 lines 13-23). Arnon does not teach the optical filter is embedded within an aperture of a plate. Beliveau teaches the optical filter is embedded within an aperture of a plate (paragraph 0066). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the projection

system of Arnon with the aperture color filter of Beliveau because the aperture color filter of Beliveau allows the projector to use a greater array of colors (paragraph 0009).

6. Claims 8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnon in view of Reeves (US Patent 2,538,041).

Regarding claims 8 and 20, Arnon does not teach the vibrating waveform includes at least one of a saw tooth, a step or a block waveform. Reeves teaches the driving waveform for the filter is one of a block waveform (figure 5h; column 8 line 14-45). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the projection system of Arnon with the color synchronization of Reeves because the color synchronization of Reeves automatically compensates and corrects for errors in color field phasing (column 3 lines 38-45).

7. Claims 9 and 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Arnon in view of Shioya (US 6,574,046 B1).

Regarding claims 9 and 21, Arnon does not teach the optical filter is a dichroic filter. Shioya teaches the optical filter is a dichroic filter (31R-G, figures 5a-b). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the projector system of Arnon with the dichroic filter of Shioya because the dichroic filter of Shioya provide a high color purity (column 3 lines 22-28).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN HOWARD whose telephone number is (571)270-

5358. The examiner can normally be reached on Monday-Friday 7:30-5:00, First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571)272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William C. Dowling/
Primary Examiner, Art Unit 2851

/Ryan Howard/
Examiner, Art Unit 2851
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